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Several instances were noted where the glaciers had advanced over their terminal moraines by riding up over them, but none where the ice showed any competency to push the frontal material, even its own debris, before it.

A driftless area was discovered on the east side of Bowdoin Bay immediately adjoining the present great ice-cap. (Bull. Geol. Club, Phila., 1895.)

BOTANY.¹

New Species of Fungi.—The activity of our fungologists is indicated by the long lists before us which have been published within the last few months. From the Proceedings of the Academy of Natural Sciences of Philadelphia (1895, pp. 413 to 441) we have "New Species of Fungi from Various Localities," by J. B. Ellis and B. M. Everhart, including ninety-nine species. Many of these are from Colorado and other western regions. We note among the more interesting species the following, viz.: *Fomes alboluteus*, from an altitude of 10,000 feet, in Colorado; *Bovista cellulosa*, *Lycoperdon alpigenum*, both from Colorado, the latter from an altitude of 11,500 feet; *Rosellinia geasteroides* from Louisiana; *Phyllachora plantaginis*, parasitic on *Plantago rugelii*, in Wisconsin.

The same authors publish in the October (1895) *Bulletin of the Torrey Botanical Club*, a paper on "New Species of Fungi" in which there are described eight new species from the Sandwich Islands, eleven from Florida, and six from Mexico. It is with much pleasure that we observe that but two of the specific names are dedicated to persons, viz.: *Schizophyllum egelingianum* (probably a synonym for *S. commune*) and *Melogramma egelingii* from Mexico. It is to be hoped that the good example here set may be followed by others upon whom it falls to find names for new species.

In the Fourth Report of the Botanical Survey of Nebraska, just issued, fifty-five new species of fungi are described by Roscoe Pound, F. E. Clements and C. L. Shear. These are distributed as follows: in the *Mucoraceæ*, 1; *Sphaerioidæ*, 1; *Mucedinaceæ*, 2; *Dematiaceæ*, 2; *Stilbaceæ*, 1 (in the new genus *Trichurus* of Clements and Shear); *Tuberulariaceæ*, 2; *Helvellaceæ*, 2, *Pezizaceæ*, 24; *Bulgariaceæ*, 1; *Agari-*

¹ Edited by Prof. C. E. Bessey, University of Nebraska, Lincoln, Nebraska.

caceæ, 20. In the last named family the name *Gymnochilus* is substituted for *Psathyra* of Fries (1821) which must fall, since it is identical with Commerson's *Psathura* (Juss. Gen., 1789). In the *Pezizaceæ* the name *Lachuea* Fries (1822), being identical with *Lachuea* L. (Sp. Pl., 1753), must give way to *Sepultaria* Cooke (1879).—CHARLES E. BESSEY.

Alaskan Botany.—In the Contributions from the U. S. National Herbarium (Vol. III, No. 6), F. V. Coville makes a report upon the collections of plants made on Yakutat Bay, Alaska, in 1892, by Frederick Funston. Mr. Coville's paper is preceded by a Field Report made by Mr. Funston. The latter contains much interesting information as to the country and its vegetation. In regard to the latter the author says, "The plant life of the region about Yakutat Bay is characterized by the dense and vigorous growth of a comparatively small number of species, giving the forests especially an appearance of great sameness. The almost level country lying on the eastern side of the bay, between Ocean Cape and the foothills of the mountains, is covered with a forest growth practically impenetrable. The great amount of fallen timber, together with the tangled and heavy undergrowth constitute such obstacles to travel that even the Indians who have lived here many years have never penetrated the forests of the mainland for a mile from their own village. The great bulk of this forest is composed of the Sitka Spruce (*Picea sitchensis*), which in this region reaches a height of seventy feet. This tree extends from sea level to an altitude of 2,200 feet on the sides of Mt. Tebenkof; but as one follows the coast line up the bay from this mountain, the upper limit becomes lower and lower, until at the entrance of Disenchantment Bay it reaches sea level, the tree not being found on the shore of this bay. A large forest lies along Dalton Creek, and there are several of considerable extent between this place and Point Manby."

"The timber of the spruce tree plays a most important part in the economy of the natives, as from it are constructed their houses and canoes, and it is used in the manufacture of oil crates, bows, arrows and other implements, while the smaller roots after being boiled and split are used in basket weaving."

The other woody plants mentioned are the hemlock (*Tsuga mertensiana*), Sitka cypress (*Chamaecyparis nootkatensis*), red alder (*Alnus rubra*), a willow (*Salix barclayi*), the elder (*Sambucus racemosa*), the Menziesia (*Menziesia ferruginea*), high bush cranberry (*Viburnum pauciflorum*), the blueberry (*Vaccinium ovalifolium*), salmon berry

(*Rubus spectabilis*), devil's club (*Echinopanax horridum*), and black currant (*Ribes laxiflorum*).

The catalogue of species includes 159 species, of which 122 are Anthophytes; 3, Gymnosperms; 9, Pteridophytes; 25, Bryophytes. The ten largest families are as follows: *Rosaceæ*, 13 species; *Carduaceæ* (*Compositæ*), 10; *Poaceæ* (*Gramineæ*), 10; *Ranunculaceæ*, 9; *Saxifragaceæ*, 9; *Scrophulariaceæ*, 8; *Ericaceæ*, 7; *Polypodiaceæ*, 6; *Ammiaceæ* (*Umbellifereæ*), 6; *Brassicaceæ* (*Crucifereæ*), 5.—CHARLES E. BESSEY.

Aquatic Plants of Iowa.—R. I. Cratty has published in the Bulletin of the Laboratories of Natural Science of the University of Iowa (Vol. III, No. 4) some "Notes on the Aquatic Phenogams of Iowa," which will be useful in recording the past and present distribution of plants which are fast disappearing. It is a pity that author and editor permitted the antiquated spelling of Phanerogam to be used. There can be no valid excuse for "Phenogam." The species noted are *Arisaema triphyllum*, *A. dracontium*, *Symplocarpus foetidus*, *Acorus calamus*, *Lemna minor*, *L. trisulca*, *L. polyrrhiza*, *Wolffia brasiliensis*, *Typha latifolia*, *Sparganium simplex*, *S. androcladum*, *S. eurycarpum*, *Najas flexilis*, *Zannichilia polustris*, *Potamogeton natans*, *P. amplifolius*, *P. nuttallii*, *P. lonchitis*, *P. heterophyllus*, *P. illinoensis*, *P. praelongus*, *P. perfoliatus*, *P. zosteræfolius*, *P. foliosus*, *P. major*, *P. pusillus*, *P. spirillus*, *P. pectinatus*, *Triglochin maritima*, *Scheuchzeria palustris*, *Alisma plantago*, *Echinodorus rostratus*, *E. parvulus*, *Sagittaria arifolia*, *S. latifolia*, *S. rigida*, *S. graminea*, *S. cristata*.—CHARLES E. BESSEY.

Another Elementary Botany.—Professor MacBride has recently brought out a little book on botany for secondary schools, under the title of "Lessons in Elementary Botany," issued by the house of Allyn and Bacon of Boston. The author presents in small space essentially that phase of botany with which we have long been familiar in Gray's "Lessons," Miss Youmans's "First Book," "Second Book" and "Descriptive Botany," and Wood and Steele's "Fourteen Weeks in Botany." Whatever merits and demerits these works have are here reproduced, somewhat modified of course. The lessons begin with "buds," followed by "stems," "roots," "the leaf," "inflorescence," "the flower," "the fruit and seed." These topics occupy about eighty-five pages, and while the subject matter is essentially similar to that in Gray's "Lessons," the treatment resembles that of Youmans's books, considerably simplified. The pupil is required to work out the

details of structure by actual examination. The remainder of the body of the book (pp. 85 to 207) is taken up with selected plants whose structure is to be worked out, and here the treatment reminds one of Wood and Steele's book and the corresponding chapters in Miss Youmans's earlier books. There is here, however, a considerable improvement in the presentation of the matter, the pupil being led on by questions which direct attention to different details.

A valuable part of the book is found in the appendix, where directions are given for collecting and preserving materials for study. Taken altogether, the book is a good one, although we cannot agree with the author that gross anatomy alone, and that practically confined to the flowering plants, is all that can be done in the secondary schools. We prefer the work suggested by the Natural History Conference, as reported by the Committee of Ten, and know from much personal experience that the high schools are rapidly supplying themselves with compound microscopes, by means of which the pupils are obtaining some knowledge of the lower plants, and of the vegetable kingdom as a whole. Neither can we endorse what the author says in the preface as to the relative value to the pupil of a knowledge of the higher rather than the lower plants. But with all these criticisms it must not be thought that the book is a poor one; on the contrary, for schools where the conditions are such as the author describes and where they must so remain, the book is a very good one.—CHARLES E. BESSEY.

Botany in the United States Department of Agriculture.

—From the recent Report of the Secretary of Agriculture, we glean the followings items, relating to the work in botany. Investigations for determining the strength of timbers of various species have been continued in the Division of Forestry, no less than 13,000 tests having been made during the year preceding the report. Measurements upon a large scale of the rate of growth of pine trees have been begun and some preliminary results obtained. Under this head the announcement is made of the establishment of experimental plantings at several points upon the Great Plains. In the Division of Botany the following announcement is gratifying to botanists. "The herbarium of the Department of Agriculture, commonly called the National Herbarium, having out-grown its old quarters, was, by kind permission of the Secretary of the Smithsonian Institution, removed and well installed in the fire-proof building of the National Museum, where it will be cared for by the botanists of this Department. This herbarium is steadily being built up and enlarged at the expense of the Department of Agriculture."

The new division of Agrostology, established during the current fiscal year has for its special work the scientific and economic study of the grasses and others forage plants. In connection with this work it is the purpose of the officers of the Division to establish "Experimental Grass Stations" in which the study of particular species may be more readily pursued.

The division of Vegetable Pathology "has been broadened during the year to include plant physiology," and the Secretary adds, "It is believed that this will add materially to the value of the investigations."

The abolition of the "Division of Microscopy" is announced. When first established, twenty years ago microscopy "was considered a separate branch of technology, but since that time the microscope has come into daily, almost hourly, use in nearly all scientific laboratories." The Secretary very properly concludes that a separate division is now "an absurdity."—CHARLES E. BESSEY.

Notes on Recent Botanical Publications.—From the Division of Botany of the U. S. Department of Agriculture we have John M. Holzinger's "Report on a collection of Plants made by J. H. Sandberg and Assistants in Northern Idaho in the year 1892." Some new species are described, viz., *Cardamine leibergii* (figured in Plate III as *C. sandbergii*), *Peucedanum salmoniflorum*, *Dicranoweisia contermina*, *Orthotrichum holzingerii*, *Bryum sandbergii*, and *Peronospora gilæ*.—Another contribution from the same source is the "Report on Mexican Umbelliferæ, mostly from the State of Oaxaca, recently collected by C. C. Pringle and E. W. Nelson," by John M. Coulter and J. N. Rose. As was to be expected, many new species were found in the collection.—With the preceding paper is a smaller one by J. N. Rose, entitled "Descriptions of plants, mostly new, from Mexico and the United States;" the new species from the United States are *Ligusticum eastwoodæ*, from the La Plata Mts., Colorado; *Vicia glauca*, from Oregon; and *Thurovia triflora*, a curious Texan composite for which a new genus had to be erected.—From the Field Columbian Museum we have C. F. Millspaugh's "Contribution to the Flora of Yucatan," which is marked "Botanical Series, Vol. I, No. 1," of the publications of this new centre of scientific activity. It includes the results of an expedition to Yucatan made in January, 1895, to which the author has added species compiled from Hemsley's *Biologia Centrali-Americana*.—M. E. Jones's "Contributions to Western Botany," published in the Proceedings of the California Academy of

Sciences, is mainly taken up with the new species discovered by him while acting as Field Agent for the U. S. Department of Agriculture. The author says "the long delay in the publication of the report necessitates the early publication of the new species." The author does not follow the "Rochester Rules" of nomenclature, and gives some reasons for not doing so, but the reader is amused to find under *Oxytropis acutirostris* (Watson) the remark "should it be necessary to reduce this genus to *Spiesia*, the name must be *S. acutirostris* (Watson)," and again under *Oxytropis nothoxys* (Gray), the synonym *Spiesia nothoxys* (Gray). For one who does not accept the "Rochester Rules" this is indeed a remarkable proceeding, since it is the deliberate addition of two synonyms (with "Jones" as the authority) to what the author calls "the mass of new names, nine-tenths of which are wholly useless."—K. C. Davis has issued a "Key to the Woody Plants of Mower County, in Southern Minnesota, in their Winter Condition" in the form of a five-page pamphlet. It will be useful in the region for which it is intended.—An interesting paper comes from Dr. G. Clautriau of Brussels, entitled *Étude Chimique du Glycogène chez les Champignons et les Levures*," from which we hope to make extracts in some future number.—CHARLES E. BESSEY.

VEGETABLE PHYSIOLOGY.¹

Ambrosia.—By this name Schmittberger designated a soft watery substance found in the burrows of certain beetles and supposed to be of use in feeding the larvæ. The exact nature of this ambrosia appears to have been for a time in doubt, owing to the fact that it was generally seen by entomologists rather than by mycologists. Of late years, however, it has been conceded to be of fungous origin, although no one appears to have studied it critically. Since the appearance of Möller's book on the Fungous Gardens of South American Ants, the subject of ambrosia has received renewed attention. In this country, Mr. Henry G. Hubbard, who has long paid especial attention to the habits of coleoptera, has repeatedly observed this substance in the chambers of *Xyleborus pubescens* in orange trees in Florida, and has recently discovered it in the burrows of *Corthylius punctatissimus* in

¹ This department is edited by Erwin F. Smith, Department of Agriculture, Washington, D. C.